

**REMARKS**

This communication is in the response to the Office Action mailed December 13, 2007. Claims 22, 24-32, and 34-42 are pending in the application. Claims 22, 24-32, and 34-42 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,840,470 to Bankes et al. ("Bankes"). No claims have been amended, cancelled, or added in this response. Claims 22, 24-32, and 34-42 are believed to be in condition for immediate allowance, and thus it is respectfully requested that the Examiner reconsider the rejection of those claims in view of the following remarks:

**I. Independent Claim 22**

Claim 22 requires "a measuring surface comprising a predetermined portion of said at least one refining surface including at least a portion of at least a pair of said plurality of bars." Bankes does not teach or disclose "a measuring surface comprising a predetermined portion of said at least one refining surface including at least a portion of at least a pair of said plurality of bars." The effect of this feature is that, in comparison with previous technology, measurement of the stress force is performed over a relatively large surface, thereby producing a more reliable result. Referring to the Office Action at page 12, paragraphs 3-4, it is the Examiner's opinion that this feature is disclosed in Bankes, and the Examiner claims that support for this contention can be found in column 4, lines 47-48 of Bankes, where it states that "[i]n the above embodiments, a single force sensor or an array of force sensors can be employed." However, in all the abovementioned embodiments, the force sensor includes a sensor head 32 which replaces a portion of one refiner bar or all of one refiner bar, and it is also

stated that the sensor head has a profile matching that of the refiner bar (see column 3, lines 24-27; column 3, lines 38-42; and column 3, line 57 to column 4, line 2). The statement that "an array of force sensors can be employed," where each force sensor includes a sensor head 32 replacing a portion of one refiner bar or all of one refiner bar, cannot be considered to disclose a measuring surface including at least a portion of at least two refiner bars. A "sensor head 32" including a portion of two or more refiner bars is not disclosed at any place in the text of *Bankes*. Instead, in several places in the specification, it is clearly defined that the "sensor head" only includes a portion of one refiner bar or all of one refiner bar (in addition to the above-mentioned references to *Bankes*, see column 7, lines 10-21; column 8, lines 48-56; and FIGS. 1-16).

Claim 22 further requires "simultaneously measuring both the magnitude and direction of stress forces in the plane of said measuring surface . . . compris[ing] measuring said stress forces in a first direction by means of a first sensor and measuring said stress forces in a second direction by means of a second force sensor, said first direction being angularly displaced with respect to said second direction, and determining said magnitude and direction of said stress forces by measuring said stress forces in said first and second directions" (emphasis added). Thus, the first and second directions, in which stress forces are measured, are both in the plane of said measuring surface. The positive effect of these features is that the measurement of the shearing forces in two directions is enabled, thereby enabling both the magnitude and direction of the resulting shearing force to be determined in any direction at all (see paragraph [0021] and paragraph [0045], from line 30 on page 12 to line 4 on page

13, of the present application). Referring to the Office Action at page 3, lines 12-20, it is the Examiner's opinion that this feature is disclosed in *Bankes*, and Applicant believes that the Examiner looks to support for this contention in column 12, lines 34-42 of *Bankes*. However, this paragraph in *Bankes* discusses "normal and shear forces," where the normal force is not in the plane of the measuring surface (sensor head 32) but is perpendicular to the measuring surface. There is nothing in that paragraph that suggests the measuring of stress forces in two different directions in the plane of the measuring surface ("sensor head") and the subsequent determination of the magnitude and direction of the stress forces by measuring the stress forces in said first and second directions. Further, the measuring of stress forces in two different directions in the plane of said measuring surface and the subsequent determination of the magnitude and direction of the stress forces by measuring the stress forces in said first and second directions are not disclosed or suggested at any other place in the text of *Bankes* (for example, see column 9, lines 55-57; column 9, line 67 to column 10, line 2; column 11, lines 4-5; column 12, lines 19-20; column 14, lines 14-15, where the normal force and the shearing force are discussed).

Therefore, claim 22 is not obvious over or anticipated by *Bankes* for the reasons stated above. Claims 24-29 depend from claim 22, either directly or indirectly, and are not anticipated by *Bankes* for at least the same reasons as claim 22.

## **II. Independent Claim 30**

Claim 30 requires "a measuring surface comprising a predetermined portion of said at least one refining surface including at least a portion of at least a pair of said

plurality of bars." *Bankes* does not teach or disclose "a measuring surface comprising a predetermined portion of said at least one refining surface including at least a portion of at least a pair of said plurality of bars." The effect of this feature is that, in comparison with previous technology, measurement of the stress force is performed over a relatively large surface, thereby producing a more reliable result. Referring to the Office Action at page 12, paragraphs 3-4, it is the Examiner's opinion that this feature is disclosed in *Bankes*, and the Examiner claims that support for this contention can be found in column 4, lines 47-48 of *Bankes*, where it states that "[i]n the above embodiments, a single force sensor or an array of force sensors can be employed." However, in all the above-mentioned embodiments, the force sensor includes a sensor head 32 which replaces a portion of one refiner bar or all of one refiner bar, and it is also stated that the sensor head has a profile matching that of the refiner bar (see column 3, lines 24-27; column 3, lines 38-42; and column 3, line 57 to column 4, line 2). The statement that "an array of force sensors can be employed," where each force sensor includes a sensor head 32 replacing a portion of one refiner bar or all of one refiner bar, cannot be considered to disclose a measuring surface including at least a portion of at least two refiner bars. A "sensor head 32" including a portion of two or more refiner bars is not disclosed at any place in the text of *Bankes*. Instead, in several places in the specification, it is clearly defined that the "sensor head" only includes a portion of one refiner bar or all of one refiner bar (in addition to the abovementioned references to *Bankes*, see column 7, lines 10-21; column 8, lines 48-56; and Figs, 1-16).

Claim 30 further requires "at least a first set of force

sensors for simultaneously measuring both the magnitude and direction of stress forces in the plane of said stress measuring member . . . compris[ing] a first force sensor for measuring said stress forces in a first direction and a second force sensor for measuring said stress forces in a second direction, said first direction being angularly displaced with respect to said second direction, whereby said magnitude and direction of said stress forces in said plane of said stress measuring member are determined from the readings of each of said first and second force sensors" (emphasis added). Thus, the first and second directions, in which stress forces are measured, are both in the plane of said stress measuring member. The positive effect of these features is that the measurement of the shearing forces in two directions is enabled, thereby enabling both the magnitude and direction of the resulting shearing force to be determined in any direction at all (see paragraph [0021] and paragraph [0045], from line 30 on page 12 to line 4 on page 13, of the present application). Referring to the Office Action at page 3, lines 12-20, it is the Examiner's opinion that this feature is disclosed in *Bankes*, and Applicant believes that the Examiner looks to support for this contention in column 12, lines 34-42 of *Bankes*. However, this paragraph in *Bankes* discusses "normal and shear forces," where the normal force is not in the plane of the stress measuring member (sensor head 32) but is perpendicular to the stress measuring member. There is nothing in that paragraph that suggests the measuring of stress forces in two different directions in the plane of the stress measuring member ("sensor head") and the subsequent determination of the magnitude and direction of the stress forces by measuring the stress forces in said first and second directions. Further, the measuring of stress forces in two

different directions in the plane of said stress measuring member and the subsequent determination of the magnitude and direction of the stress forces by measuring the stress forces in said first and second directions are not disclosed or suggested at any other place in the text of *Bankes* (for example, see column 9, lines 55-57; column 9, line 67 to column 10, line 2; column 11, lines 4-5; column 12, lines 19-20; column 14, lines 14-15, where the normal force and the shearing force are discussed).

Therefore, claim 30 is not obvious over or anticipated by *Bankes* for the reasons stated above. Claims 31, 32, and 34-42 depend from claim 30 either directly or indirectly and are not anticipated by *Bankes* for at least the same reasons as claim 30.

### **III. Concluding Remarks**

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone Applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: March 13, 2008

Respectfully submitted,

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